



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,086	02/25/2004	Shan-An Yang	BHT-3111-424	8531

7590 01/04/2007  
BRUCE H. TROXELL  
SUITE 1404  
5205 LEESBURG PIKE  
FALLS CHURCH, VA 22041

EXAMINER
----------

FARAGALLA, MICHAEL A

ART UNIT	PAPER NUMBER
----------	--------------

2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/785,086

Applicant(s)

YANG ET AL.

Examiner

Michael Faragalla

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims **10,16,19, and 22** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Consider Claims **16 and 19**, applicants mention, " the characteristic is determined by....". It is not clear which characteristic are the claims referring to, since the independent claim 11 states two "**state parameters**", each parameter is determined according to at least one characteristic.

Consider **Claims 10 and 22**, it is unclear as to what exactly is the applicant claiming in those two claims. Therefore, for purpose of examination the claims

Art Unit: 2617

are read as “***the characteristic is determined according to a number of times of transmitting the transmitted packets***”.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2617

6. Claims **1,2,4-8,10-16,19,21, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boer et al (publication number: US 2004/0101035)** in view of **Girardeau et al (Patent number: 7,099,398)**.

Consider **Claim 1**, Boer et al clearly shows and discloses a method for modifying a transmission rate of a wireless communication system comprising a transmitter and a receiver (figure 1), the method comprising:

- (a) Transmitting a plurality of transmitted packets at the transmission rate by the transmitter (figure 1; paragraphs 4,6,7,19 and 23).
- (b) Receiving a plurality of received packets corresponding to the transmitted packets by the receiver (figure 1; paragraph 19).
- (c) Determining a state parameter according to at least a characteristic determined by the transmitted packets and the received packets (paragraph 19 and 20; abstract); (the state parameter is read as signal quality characteristic).
- (d) Modifying the transmission rate according to the state parameter (figure 1; paragraphs 4,6,7,19 and 23; abstract).

However, Boer et al show modifying the transmission rate but do not specifically show adjusting the transmission rate.

In the same field of endeavor, Girardeau et al clearly show adjusting the transmission rate (abstract; column 2, lines 47-67).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Girardeau et al into the

Art Unit: 2617

teaching of Boer et al in order to ensure reliability of data transmission within a wireless communication system.

Consider **Claim 11**, Boer et al clearly shows and discloses a method for modifying a transmission rate of a wireless communication system comprising a transmitter and a receiver (figure 1), the method comprising:

(a) Transmitting a plurality of first transmitted packets at a first transmission rate and a plurality of second transmitted packets at a second transmission rate by the transmitter (figure 1; paragraphs 4,6,7,19 and 23); (based on signal quality characteristic, the transmission rate is modified. Therefore, the transmission rate before modifying is read as first transmission rate, and the transmission rate after modifying is read as second transmission rate).

(b) Receiving a plurality of first received packets corresponding to the first transmitted packets and a plurality of second received packets corresponding to the second transmitted packets by the receiver (figure 1; paragraph 19).

(c) Determining a first state parameter according to at least one characteristic determined by the first transmitted packets and the first received packets (paragraph 19 and 20; abstract); (the state parameter is read as signal quality characteristic).

(d) Determining a second state parameter according to at least one characteristic determined by the second transmitted packets and the second received packets (paragraphs 19, 20, and 23; abstract); (Boer et al show that modifying a data rate

Art Unit: 2617

of the transmitter depends at least in part on the signal quality, therefore, the first sent packets are sent at a rate different from the later sent packets).

(e) Modifying at least one of the first and the second transmission rates according to at least one of the first and second state parameters (figure 1; paragraphs 4,6,7,19 and 23; abstract).

However, Boer et al show modifying the transmission rate but do not specifically show adjusting the transmission rate.

In the same field of endeavor, Girardeau et al clearly show adjusting the transmission rate (abstract; column 2, lines 47-67).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Girardeau et al into the teaching of Boer et al in order to ensure reliability of data transmission within a wireless communication system.

Consider **Claim 2**, Boer et al as modified by Girardeau et al clearly show the method of claim 1 wherein the characteristic is determined according to a number of the transmitted packets and number of the received packets (paragraph 23).

Consider **Claim 4**, Boer et al as modified by Girardeau et al clearly show the method of claim 1 wherein the characteristic is determined according to the signal strength of the received packets paragraphs 19 and 20).

Art Unit: 2617

**Consider Claim 5**, Boer et al as modified by Girardeau et al clearly show the method of claim 4 wherein the state parameter is a value corresponding to the signal strength of the received packets (paragraphs 19 and 20).

Consider **Claims 6**, Boer et al as modified by Girardeau et al clearly show the method of claim 1 wherein the modifying step is performed according to a comparison result of the state parameter and at least a threshold value (paragraphs 43 and 44).

Consider **Claims 7 and 8**, Boer et al as modified by Girardeau et al clearly show the method of claim 6, wherein the modifying step further comprises increasing the transmission rate if the state parameter is larger than a first threshold, and further wherein the adjusting step further comprises decreasing the transmission rate if the state parameter is smaller than a second threshold (paragraphs 43 and 44).

Consider **Claims 10 and 22**, Boer et al as modified by Girardeau et al clearly show the method of claim 1, as well as the method of claim 11 wherein the characteristic is determined according to at least one of the number of times of transmitting the first and the second transmitted packets (paragraph 23); (the characteristic is read as the number of packets received at receiver side).



Art Unit: 2617

Consider **Claim 12**, Boer et al as modified by Girardeau et al clearly show the method of claim 11 wherein the modifying step is performed according to a comparison result of the first state parameter and a first threshold (paragraph 44).

Consider **Claim 13**, Boer et al as modified by Girardeau et al clearly show the method of claim 12 wherein the modifying step further comprises increasing at least one of the first and second transmission rates if the first state parameter is larger than the first threshold (paragraph 44).

Consider **Claim 14**, Boer et al as modified by Girardeau et al clearly show the method of claim 11 wherein the modifying step is performed according to a comparison result of the second state parameter and a second threshold (read as predefined number of packets) (paragraph 23).

Consider **Claim 15**, Boer et al as modified by Girardeau et al do not specifically show the method of claim 14 wherein the modifying step further comprises decreasing at least one of the first and the second transmission rates if the second state parameter is smaller than the second threshold.

However, in the same field of endeavor, Girardeau et al show that the method of claim 14 wherein the modifying step further comprises decreasing at least one of the first and the second transmission rates if the second state parameter is smaller than the second threshold (claim 5); (Girardeau et al show that the

Art Unit: 2617

transmission rate is lowered if the first transmission rate did not give a satisfying error rate).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Girardeau et al into the teaching of Boer et al in order to ensure reliability of data transmission within a wireless communication system.

Consider **Claim 16**, Boer et al as modified by Girardeau et al clearly show the method of claim 11 wherein the characteristic is determined by a number of the first received packets and a number of the first transmitted packets (paragraph 23).

Consider **Claim 19**, Boer et al as modified by Girardeau et al clearly show the method of claim 11 wherein the characteristic is determined according to the signal strength of at least one of the first and the second received packets (paragraphs 19 and 20).

Consider **Claim 21**, Boer et al as modified by Girardeau et al clearly show the method of claim 11 wherein the first transmitted packets and the second transmitted packets are transmitted by turns (paragraphs 43 and 44).

Art Unit: 2617

7. Claims **3,17, and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boer et al (publication number: US 2004/0101035)** in view of **Girardeau et al (Patent number: 7,099,398)** and further in view of **Srikrishna et al (publication number: US 2005/0129005)**.

Consider **claim 3**, Boer et al as modified by Girardeau et al show the method of claim 2, but fail to specifically show that the state parameter is a ratio determined by dividing the number of received packets with the number of transmitted packets.

However, in related art, Srikrishna et al shows that the state parameter is a ratio determined by dividing the number of received packets with the number of transmitted packets (abstract).

Therefore, it would have been obvious to person skilled in the art at the time the invention was made to incorporate the teaching of Srikrishna et al into the teaching of Boer et al and Girardeau et al in order to analyze a quality of routing paths for a wireless network (Srikrishna et al, paragraph 7).

Consider **Claims 17 and 18**, Boer et al as modified by Girardeau et al show the method of claim 16, but fail to specifically show the first state parameter and the second state parameter is a ratio determined by dividing a number of the first and the second received packets with a number of the first and second transmitted packets.

Art Unit: 2617

However, in related art, Srikrishna et al shows that the first state parameter and the second state parameter is a ratio determined by dividing a number of the first and the second received packets with a number of the first and second transmitted packets (abstract).

Therefore, it would have been obvious to person skilled in the art at the time the invention was made to incorporate the teaching of Srikrishna et al into the teaching of Boer et al and Girardeau et al in order to analyze a quality of routing paths for a wireless network (Srikrishna et al, paragraph 7).

8. Claims **9 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boer et al (publication number: US 2004/0101035)** in view of **Girardeau et al (Patent number: 7,099,398)** and further in view of **Adachi (Publication number: 2001/0022806)**.

Consider **Claims 9 and 20**, Boer et al as modified by Girardeau et al show the method of claim 1, as well as the method of claim 11, but fail to specifically show that the step of determining whether to use a RTS/CTS mechanism according to at least one of the first and second state parameters.

However, in related art, Adachi shows that the step of determining whether to use a RTS/CTS mechanism according to at least one of the first and second state parameters (paragraph 110).

Art Unit: 2617

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Adachi into the teaching of Boer et al and Girardeau et al in order to improve the throughput of the network system (Adachi, abstract).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) CONTROLLING DATA TRANSMISSION RATE ON THE REVERSE LINK FOR EACH MOBILE STATION IN A DEDICATED MANNER (**Publication number: US 2002/0141349**).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Faragalla whose telephone number is (571) 270-1107. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

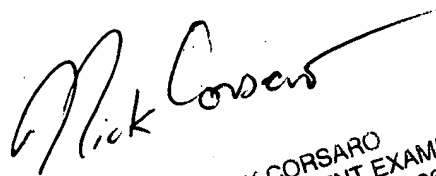
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Faragalla

12/21/2006



NICK CORSARO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600